Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

In the Claims

1-48. (Cancelled)

49. (New) An embolectomy device for use in a blood vessel having a diameter, comprising:

a catheter having a proximal end, a distal end and a lumen extending therebetween, the lumen having a longitudinal axis extending from the proximal end to the distal end;

a vacuum source fluidly attached to the proximal end of the catheter to provide a source of vacuum to the catheter lumen;

a wire having a proximal end and a distal end and a center line extending therebetween that follows the path of the wire, the wire further having a proximal region, an intermediate region and a distal region, and the wire being at least partially disposed in the lumen,

wherein the intermediate region has a generally uniform cross-sectional area along its length,

wherein the distal region of the wire includes a distal tip having a uniform profile along a length and a region proximate the distal tip having a maximum cross-sectional area perpendicular to the longitudinal axis of the lumen that is greater than the cross-sectional area of the intermediate region of the wire and wherein the distal tip has a cross-

sectional area that is less than that of the proximate region and wherein the intermediate region cross-sectional area is also less than that of the proximate region.

50. (New) The embolectomy device of claim 49 wherein the distal region has a maximum width that is less than half the diameter of the blood vessel.

51. (New) The embolectomy device of claim 50 wherein the proximate region of the distal region has a curved profile parallel to the longitudinal axis.

52. (New) The embolectomy device of claim 51 wherein the maximum cross-sectional area of the proximate region is at least twice the cross-sectional area of the distal tip.

53. (New) The embolectomy device of claim 52 wherein the cross-sectional shape of the wire along the central axis is a simple closed shape.

54. (New) The embolectomy device of claim 53 wherein the cross-sectional shape of the wire along the center line is circular.

55. (New) The embolectomy device of claim 54 wherein the wire is configured to move rapidly along the longitudinal axis of the lumen proximally and distally.

56. (New) The embolectomy device of claim 53 wherein the proximate region has a first section having a first end that is the maximum cross-sectional area of the proximate region along the longitudinal axis and a second end that abuts the distal tip, the proximate region further having a second section having a first end that abuts the first end of the first section and a second end that has a cross-sectional area equal to that of the intermediate region of the wire,

wherein the first section is longer than the second section.

57. (New) The embolectomy device of claim 56 wherein the first section transitions gradually from the first end of the first section to the second end of the first section.

58. (New) The embolectomy device of claim 56 wherein the first section is at least twice as long as the second section.

59. (New) The embolectomy device of claim 56 wherein the magnitude of the tangent of any angle between a first line tangent to a point on the center line in the first section and a second line, coplanar to the first line, that is tangent to a second point on the surface of the wire is less than 0.84, where the second point is defined by the intersection of the surface of the wire and a line that extends through the point on the center line and is perpendicular to the first line.

60. (New) The embolectomy device of claim 59 wherein the magnitude of the tangent is less than 0.71.

61. (New) The embolectomy device of claim 59 wherein the magnitude of the tangent is less than 0.58.

62. (New) The embolectomy device of claim 59 wherein the magnitude of the tangent is less than 0.47.

63. (New) The embolectomy device of claim 59 wherein the magnitude of the tangent is less than 0.37.

64. (New) The embolectomy device of claim 49 wherein the distal tip and the intermediate regions have approximately the same cross-sectional areas.

65. (New) The embolectomy device of claim 65 wherein the distal tip cross-sectional area is equal to that of the intermediate region.